

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

REC'D 07 FEB 2005

WIPO PCT

PCT

To:

see form PCT/ISA/220

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/B2005/050078

International filing date (day/month/year)
06.01.2005

Priority date (day/month/year)
09.01.2004

International Patent Classification (IPC) or both national classification and IPC
H04N13/00

Applicant
KONINKLIJKE PHILIPS ELECTRONICS N.V.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office - P.B. 5818 Patentlaan 2
NL-2280 HV Rijswijk - Pays Bas
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl
Fax: +31 70 340 - 3016

Authorized Officer

Bequet, T

Telephone No. +31 70 340-3339



**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2005/050078

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.
PCT/IB2005/050078

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	6,7,12,13,17,18,31,32,34,35
	No: Claims	1-5,8-10,14-16,19-22,23-30,33
Inventive step (IS)	Yes: Claims	
	No: Claims	6,7,12,13,17,18,31,32,34,35
Industrial applicability (IA)	Yes: Claims	1-35
	No: Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following document/s/:

D1: WO 99/08145

D2: US 2003/0067421

D3: XP 001052357

1) The present application relates to a volumetric 3D display, according to the description (page 2, lines 22-29), it is known to adjust the focal length for displaying images in a volumetric image space.

2) The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of at least claims 1 and 23 is not new in the sense of Article 33(2) PCT.

2.1) D1 which is considered as the closest prior art discloses a two dimensional image display (fig.2, 11) for generating a two-dimensional image;

a first focusing element (12) for projecting the 2D image in an imaging volume (page 2, lines 3-6); and

means for altering the optical path so as to alter the position of the virtual image in the imaging volume (page 6, lines 20-26; page 3, lines 25-29).

All the features of present claim 1 being known from D1 it is therefore not new. The same objection applies for corresponding method claim 23.

D2 also discloses such a 3D display Fig.3. The optical path between the image source 300 and the focusing lens (330) is altered by the rotating disk (320). As a consequence claims 1 and 23 are also known from D2. D3 also discloses a varifocal lens associated with projection (focusing) lenses and a high speed display for producing a 3D display.

As a consequence the subject matter of the application which is to introduce an optical element for modifying an optical path for obtaining a volumetric 3D display is well known from the prior art.

3) In the remaining dependant claims structural details to the apparatus defined in the independant claims 1 or 23 are set out, all of which insofar as they are not explicitly

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/IB2005/050078

disclosed in D1 relate to routine measures normally to be expected from the skilled person. Thus these claim lack novelty or an inventive step.

In the present case they are addressing the different possibilities for modifying an optical path with an optical element. Some of the solutions are already explicitly known in D1-D3.

in particular,

- a) Claims 2-4, 9, 10, 14, 15, 16, 17, 19, 21, 22 are explicitly known from D1-D3 (D2 §45, D1 page 3, lines 25-29),
- b) Claim 5, 11 (refraction aspect), 20 is known from D3,
- c) Claim 8 (D2, §35).
- d) Same observation for corresponding dependent method claims.